

# Owners Manual

TEC ELECTRONIC CASH REGISTER

## MA-68 SERIES

U.S.A. & CANADA VERSION



**TEC** TOKYO ELECTRIC CO.,LTD.

**WARNING**

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which cause the user at his own expense will required to take whatever measures may be required to correct the interference.

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## TO OUR CUSTOMERS

Thank you for choosing a TEC electronic Cash Register MA-68 Series. This instruction manual provides a description of the functions and handling of this register and should be read carefully to obtain maximum performance. Since every consideration has been given to safety, there is no danger of damaging the machine by incorrect operation.

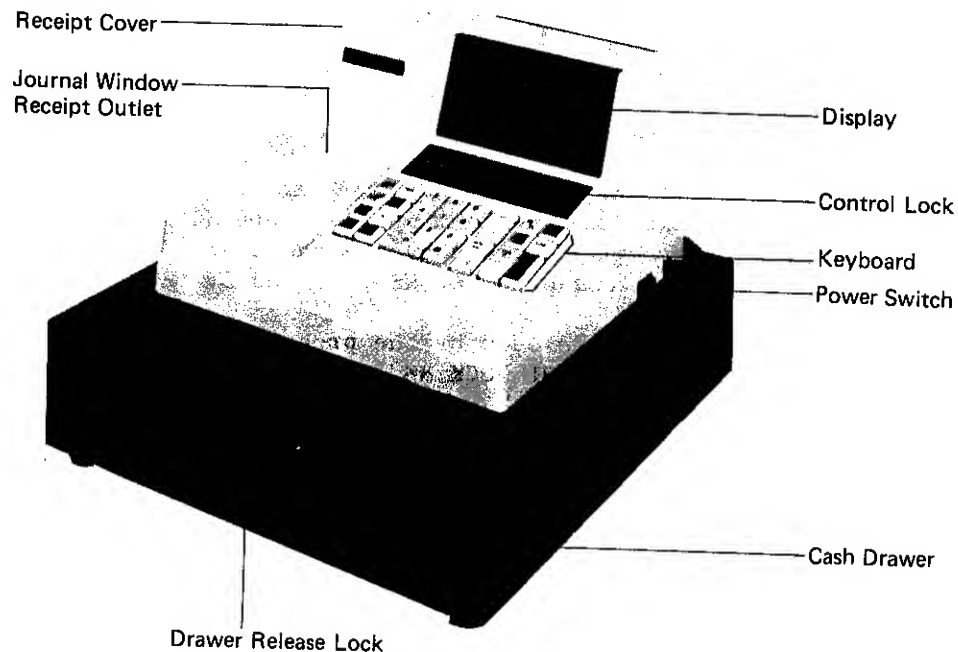
Please refer to this manual whenever you have any doubts concerning the machine. This machine has been manufactured under strict quality control and should give you full satisfaction. However, if the machine is damaged during transit, or there are any unclear points in this manual, please contact your local TEC representative.

- The specifications described in this manual may be modified by TEC, if necessary.
- Be sure to keep this manual for future reference.

## PRECAUTIONS

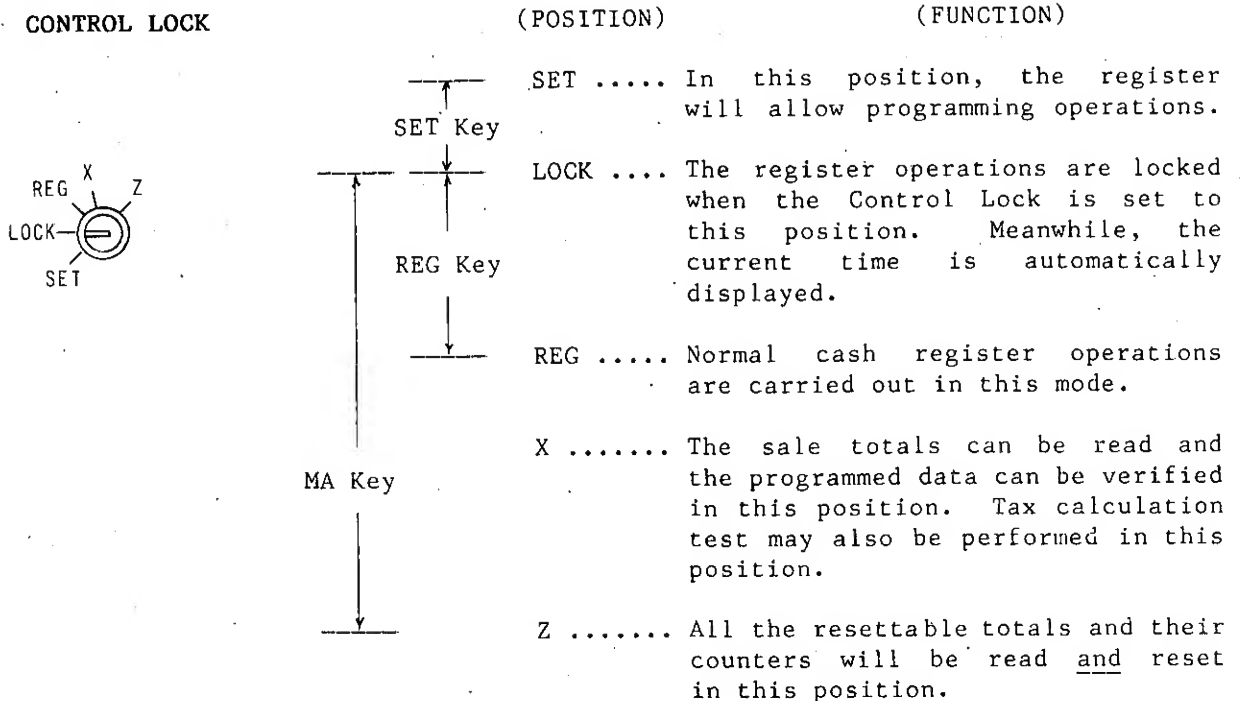
1. The keys on the keyboard work with a light touch. Avoid pressing the keys too hard.
2. Avoid handling the machine with wet hands.
3. Do not apply thinner or other volatile oils to the cabinet or other plastic parts. If dirty, wipe off with a piece of cloth soaked in neutral detergent and squeezed tightly.

## APPEARANCE AND NOMENCLATURE






- **Power Switch** ... The Power Switch is located at the righthand side of the cabinet. The AC power is turned on when the switch is pushed to ON, and turned off when the switch is pushed to OFF.

# CONTROL LOCK AND MODE SELECTOR KEYS



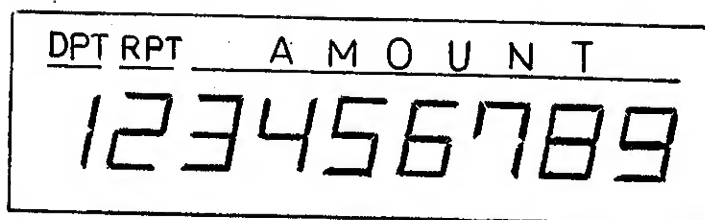
## MODE SELECTOR KEYS

-  **REG Key:** The REG Key is used by the cashier who operates the register. This key can access the positions of LOCK and REG.
-  **MA Key:** The MA Key is used by the store manager who will daily supervise the collection of money and the printing of transactions recorded by the register. This key can access the positions of LOCK, REG, X, and Z.
-  **SET Key:** The SET Key is used by the programmer. This key can access the positions of LOCK and SET.

All the keys can be removed at the "LOCK" or "REG" position.

## DISPLAY

The front display is located at the top of the register just above the keyboard. The rear display (optional) has the same content as the front display.



### DISPLAY CONTENT

AMOUNT (7 digits): Displays the numeric data, such as amount, quantity, etc.

RPT (1 digit): Displays the repeat count. It indicates nothing on the first item entry, showing 2, 3, 4, etc. from the second repeated item entry on. Since it has only one digit, 0 will be displayed for count 10, 1 for 11, etc.

When an item-correct is operated by the VOID key, the count is decremented by 1. The negative symbol "-" will be displayed during Percent Discount, Returned Merchandise operations, or when the sale total is negative.

DPT (1 digit): Displays 1 or 2 as code of the department through which the item has been entered.

It also displays the change symbol "£" when the change amount is displayed in the AMOUNT portion, and displays the error symbol "E" when an error arises.

### TIME DISPLAY

The current time is automatically displayed in the AMOUNT DISPLAY when the Control Lock is turned to the "LOCK" position. The time is indicated in the 24-hour system.

#### TIME DISPLAY FORMAT

ex.) 8:05 a.m.

8-05

1:24 p.m.  
(13:24 )

13-24

# KEYBOARD LAYOUT

## MA-68 KEYBOARD LAYOUT

FEED	NS	7	8	9	TXBL	R/A	PO
#	%-	4	5	6	1	ST	Chg
RTN	X	1	2	3	NON	TXBL	AT/TL
VOID	C	0	00		TXBL	TL	
					2		

↑  
Department Keys

## FUNCTION OF EACH KEY

FEED

### PAPER FEED KEY

This key is used to feed the paper. As long as this key is pressed down, the paper keeps on feeding. This key will function at any position of the Control Lock except at "LOCK".

NS

### NO-SALE KEY

This key is used to open the cash drawer without relating to a sale. Thus it may be operated in such occasions as exchanging a bill into smaller changes and testing the print condition.

To operate, depress this key with the Control Lock in the "REG" position in an out-of-sale condition. An "NS" symbol is printed to indicate "no-sale" and the drawer opens.

X

### QUANTITY EXTENSION (MULTIPLICATION) KEY

This key is used to multiply a department entry by a quantity.

The multiplication order is as follows:

QUANTITY	→	X	→	UNIT PRICE	→	DEPT
max. 3 dig.				max. designated by the Listing Capacity		

The product  
must not  
exceed 6  
digits.



#

**NON-ADD NUMBER PRINT KEY**

This key is used to print a non-add number, such as Customer No., and Check No., for future reference. A maximum 6-digit number may be entered and printed through this key, and the number will not affect any sales totals.

To operate, enter the required No., and depress this key when the Control Lock is in the "REG" position.

A non-add number entry is allowed as the first line item, between two line items, or after the sub-total amount if before finalizing the sale.

%—

**PERCENT DISCOUNT KEY**

This key is used to enter a discount calculated on a percentage rate. When this key is depressed after a department item, the discount amount is calculated on the preset or a manual-entry rate and subtracted from the department item amount. This key can also be operated in the same way after depressing the **ST** key if the percent discounting is performed for the sale total.

A percent rate can be preset on this key; however, if another rate is entered through the numeric keyboard prior to the depression of the **%—** key, the entered rate prevails. The preset rate will be active by a simple depression of the **%—** key.

The fraction resulted from the percent calculation will automatically be rounded off.

Since the **%—** key is fixed with non-taxable status, percent discount is calculated from the amount before taxed, and the tax added to the taxable items entered through **DP 1** (Taxable Department) will remain unchanged.

RTN  
MDSE**RETURNED MERCHANDISE / DESIGNATED LINE VOID KEY**

This key is used to enter an item once purchased but returned by a customer, or to void an item recorded before the last line item within a sale.

To operate, depress this key before or after the amount entry and then depress the Department Key to which the item belongs.

VOID

**ITEM CORRECT (LAST LINE VOID) KEY**

This key is used to delete the last line item of a Department or %— within a sale. Depressing this key once will remove the last line item from the bill, printing the same amount with the "VD" symbol below the item to the corrected.

C
---

## CLEAR KEY

This key is used to correct a numeric entry error if prior to depressing any other function key, or to correct any error condition and cancel the alarm buzzer.

If this key is depressed before depressing a department key in a quantity extension sequence, all of the quantity, the 

X
---

 key, and the unit price entries are cleared at a time. If this key is depressed after the 

RTN	MDSE
-----	------

 and a numeric entry (or the reverse sequence), both the 

RTN	MDSE
-----	------

 key and the numeric entries are cleared at a time.

If the 

C
---

 key is depressed after a sub-total is obtained, the sub-total amount is then displayed.

The 

C
---

 key may be operated regardless of any control Lock position except "LOCK".

7	8	9
4	5	6
1	2	3
0	00	

## NUMERIC KEYS

These keys are used to enter numeric values such as amount, quantity, and non-add number.

Depressing the 

00
----

 key once is the same as depressing the 

0
---

 key twice consecutively.

The maximum listing capacity for numeric entry is 6 digits. However, the maximum digits for department items will be limited by the preset Listing Capacity.

TXBL
1
NON TXBL
2

## DEPARTMENT KEYS

These are department keys through which sales items are registered. To operate, enter the amount and then depress either of these keys. The 

TXBL	1
------	---

 (Department 1) Key is used for taxable items, and the 

NON TXBL	2
----------	---

 (Department 2) Key is used for non-taxable items.

When a department key is depressed repeatedly, the amount entered through the first depression of the department key will repeatedly be entered, with the RPT display window indicating the repeat count. The sale will not be finalized until a finalizing key (

AT/TL
-------

 or 

Chg
-----

) is operated. The amount of "0" cannot be entered through a department key.

A maximum of 6 digits may be entered as amount; however, if a Listing Capacity is preset, the maximum digits of the amount will be limited and result in an error when exceeding the limit.

R/A

#### RECEIVED ON ACCOUNT KEY

A received on account transaction is used to identify money which is in the drawer but not business. The amount entered is thus included in the "Cash-in-drawer" total but not in the sale totals.

To operate, enter an amount of payment and then depress the **R/A** key whilst the register is in an out-of-sale condition. The drawer immediately opens. No entry with a "0" amount is allowed through the **R/A** key.

PO

#### PAID OUT KEY

A paid out transaction is used when an amount of money is removed from the cash drawer without relating to a sale. When the **PO** key is used, the amount entered is subtracted from the "Cash-in-drawer" total but does not affect the sale totals.

To operate, enter the cash amount taken from the drawer and depress the **PO** key whilst the register is in an out-of-sale condition. The drawer immediately opens to enable cash payout. No entry with a "0" amount is allowed through the **PO** key.

ST

#### SUB-TOTAL KEY

This key is used to obtain the sub-total (total of the sale so far made without tax) amount during a sale. When this key is depressed, the sub-total is printed and displayed.

If the **ST** key is depressed more than once consecutively, the first depression only will print and display the sub-total; further depressions will only display but not print the sub-total amount.

TXBL  
TL

#### TAXABLE TOTAL KEY

This key is used to read the sale total with tax due so far made. When this key is depressed, the amount of sale total plus tax of the sale up to then is displayed but not printed. To allow any other add-on item to follow, the actual tax amount will be added and printed on finalization of the sale.

AT/  
TL

#### AMOUNT TENDERED / CASH TOTAL KEY

This key is used to record all cash paid on transactions, and will be able to finalize a sale operation. Usually the key is programmed to function as both amount tendered and cash total key. However, the key may be programmed to operate with enforced tendering only or as a cash total key only.

#### AMOUNT TENDERED FUNCTION

After the **TXBL TL** key has been depressed, enter the amount tendered by the customer in payment of the sale, and then depress the **AT/TL** key. The change is automatically computed, displayed, and printed.

If the amount tendered is smaller than the sale total, the amount tendered is printed with the balance still due displayed, but the drawer is not yet opened. In this case, ask the customer for additional payment in cash and repeat the same tendering operation, or use the **Chg** key if the balance due is processed as charge sale.

#### TOTAL KEY FUNCTION

To obtain the total and finalize a cash sale, depress the **AT/TL** key without any numeric entry. The sale is finalized with the total printed and displayed, and the drawer opens.

**NOTE:** If the **AT/TL** key has been programmed to function as "Tendered" key only and the sale total is "0" or negative, no amount tendered can be entered. In this case, the **AT/TL** key will function as the "Total" key, so just depress it to obtain the total and finalize the sale.

**Chg**

#### **CHARGE TOTAL KEY**

This key is used to finalize a sale as an alternative method of payment for media other than cash, such as check, credit card, or charge. To operate, depress the **Chg** key, instead of **AT/TL**, to obtain the total and finalize the sale. However, no amount tendered can be entered before depressing this key. This key may be operated to finalize a sale of "0" or negative balance.

## REGISTERING PROCEDURE FOR SALES

The following are patterns for actual registering operations. In the following examples, "[ ]" indicates an input through the numeric keys, " " indicates a depression of the transaction key, and "---" indicates other registering and/or finalizing operations.

**NO-SALE** (Control Lock: REG, must be outside a sale)

[NS]

**DEPARTMENT ITEM ENTRY** (Control Lock: REG)

[AMOUNT] [DEPT] \* → ---

\*The [DEPT] key indicates  
[TXBL 1] (Department 1) or  
[NON TXBL 2] (Department 2) key.  
Use Department 1 for taxable  
items, and Depart 2 for non-  
taxable items.

**REPEAT ENTRY** (Control Lock: REG)

[AMOUNT] [DEPT] [DEPT] [DEPT] ... → ---

(Repeat depressing the same [DEPT] key as many times as  
the desired count.)

**QUANTITY EXTENSION (MULTIPLICATION)** (Control Lock: REG)

[QUANTITY] [X] [UNIT PRICE] [DEPT] → ---  
max. 3 dig.

(The product must not exceed  
6 digits.)

**ITEM CORRECT (LAST LINE VOID)** (Control Lock: REG)

[AMOUNT] [DEPT] [VOID] → ---  
\*

(The item marked with "\*" is  
invalidated from the sale.)

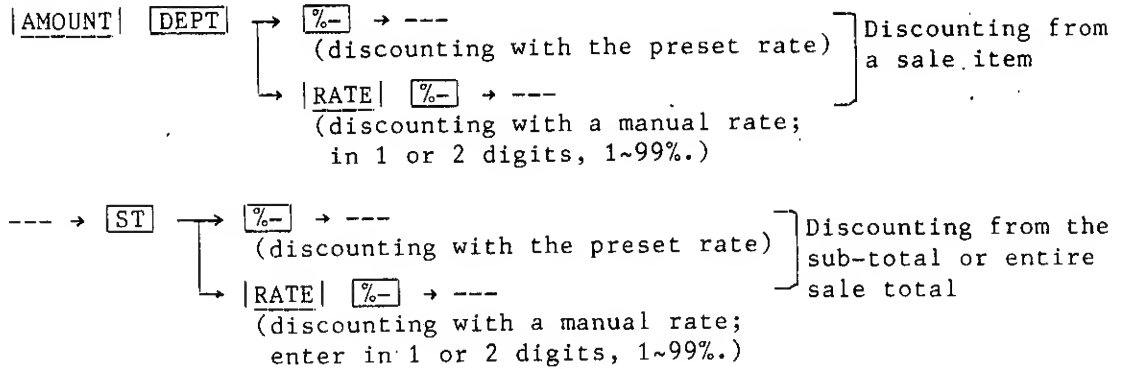
[AMOUNT] [DEPT] [DEPT] [DEPT] [VOID] → ---  
\*

(An item-correct after  
repeat entries will  
invalidate only the last  
one item of the repeated.)

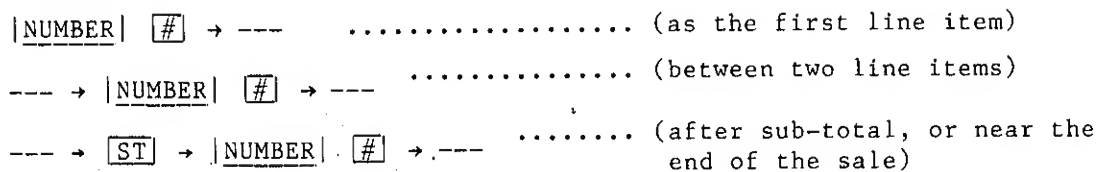
[QUANTITY] [X] [UNIT PRICE] [DEPT] [VOID] → ---  
\*

(An item-correct after a quantity  
extension will invalidate the product  
that is resulted from the multiplica-  
cation.)

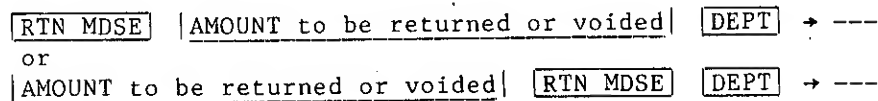
PERCENT DISCCOUNT (Control Lock: REG)



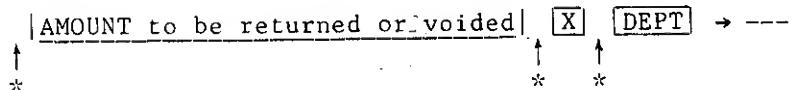
NON-ADD NUMBER PRINT (Control Lock: REG) Max. 6 digits allowed



RETURNED MERCHANDISE, DESIGNATED LINE VOID (Control Lock: REG)



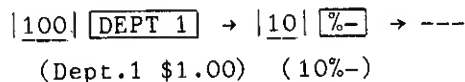
QUANTITY EXTENSION WITH RETURN OR VOID



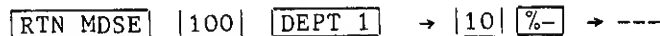
Depress [RTN MDSE] at any one of the positions marked with "\*".

RETURN OR VOID WITH %- ATTACHED

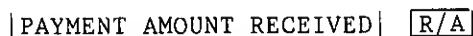
ex.) A customer purchased an item as shown in the following operation:



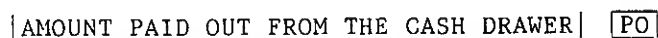
Now the customer comes up to return the above purchased item:



RECEIVED ON ACCOUNT (Control Lock: REG, must be outside a sale)



PAID OUT (Control Lock: REG, must be outside a sale)



SUB-TOTAL (Control Lock: REG)

--- → **[ST]** → --- ... The sale total (without tax) so far is displayed and printed, but the sale is not finalized.

TAXABLE TOTAL (Control Lock: REG)

--- → **[TXBL TL]** → --- ... The total amount of the sale items plus tax so far registered is displayed but not printed. The sale is not yet finalized.

CASH TOTAL (Control Lock: REG)

--- → (**[ST]**) → (**[TXBL TL]**) → **[AT/TL]** ... The sale is finalized, the drawer opens, the sale total is displayed and printed.

CASH TENDERING (Control Lock: REG)

--- → (**[ST]**) → (**[TXBL TL]**) → **[CASH AMOUNT TENDERED]** **[AT/TL]**

... The change due (if any) is displayed, the sale is finalized, the drawer opens, and the amount tendered and the change due are printed.

CHARGE TOTAL (Control Lock: REG)

--- → (**[ST]**) → (**[TXBL TL]**) → **[Chg]** ... The sale is finalized, the drawer opens, the sale total is displayed and printed.

MULTI-TENDERING (Control Lock: REG) ... Short tendering repeated by cash.

--- → (**[TXBL TL]**) → **[CASH AMOUNT TENDERED]** **[AT/TL]**  
→ **[CASH AMOUNT TENDERED]** **[AT/TL]**  
→ (**[CASH AMOUNT TENDERED]**) **[AT/TL]**

SPLIT-TENDERING (Control Lock: REG) ... Short tendering repeated by different media keys.

--- → (**[TXBL TL]**) → **[CASH AMOUNT TENDERED]** **[AT/TL]**  
→ **[Chg]** ... Cash and Charge Split Payment

- NOTES: 1. In both MULTI-TENDERING and SPLIT-TENDERING operations, the sale is finalized and the drawer opens on reaching the sale total amount.
2. MULTI-TENDERING is not possible with the [Chg] key. In SPLIT-TENDERING, cash tendering comes first, and the [Chg] depression must come last. The reverse order is not allowed.

#### POWER FAILURE PROCESS

Should a power failure occur during printing, the record of all the registered items will be protected by the battery and the sale total will correctly be recalled on the power recovery. However, please note the following phenomena in printing at a power recovery.

##### POWER FAILURE DURING PRINTING A DEPARTMENT ITEM

If a power failure occurs during printing of a department item, the correct printout of the item may not be guaranteed. However, on the power recovery, the power failure symbol "\*\*\*\*\*" will be printed on the next line, and then the sub-total of the sale, including the department item amount that was being printed at the power failure, will automatically be printed on the line to follow. The operator may then go on to another registering item or finalize the sale.

##### POWER FAILURE DURING PRINTING ANY OTHER THAN A DEPARTMENT ITEM

In this case, neither may the correct printout of the item be guaranteed on the power recovery. However, on the power recovery the power failure symbol "\*\*\*\*\*" will be printed on the next line, and then the item that was being printed at the power failure will automatically be re-printed correctly. The operator may then continue operations.

#### PRINTER LOCK CONDITION

If the printer is locked due to paper jamming or other obstacles, the printer will stop its action and becomes in a lock condition with error alarm and "EE" display so that the printer may be protected from being damaged at the earliest stage. In that case, remove the cause of the trouble and then depress the [C] key to regain the normal condition. If any item was being printed just before the printer becomes locked, the print content of the item will not be guaranteed. However, an empty line will be fed and the printer-lock symbol "\*-\*-\*-\*" will automatically be printed on the line to follow on regaining the normal condition.



# ACTUAL REGISTERING OPERATIONS AND PRINT SAMPLES

(BUSINESS CONTENT)

(KEY OPERATION)

(PRINT SAMPLE IN RECEIPT-FORMAT)

## NO-SALE

The cashier wants to check the print condition before starting to operate.

Or in case when a customer asks to change his bill into smaller coins without purchasing any items.

Control Lock: REG

NS

06-15-84

\* NS

NO 0011

11-52

## DEPARTMENT ENTRY

An item of \$1.23 into DP 1.  
Three items of \$4.56 each into DP 2.  
Sub-total Read  
(Taxable Total Read, i.e., Sale Total + Tax due),  
Paid in Cash,

Control Lock: REG

123 DP 1

456 DP 2

DP 2

DP 2

ST

(TXBL TL)

AT/TL

06-15-84

1 \*1.23 \*

2 \*4.56

2 \*4.56

2 \*4.56

\*14.91 SI

\*0.12 IX

\*15.03 CR

NO 0012

11-53

(NOTE: \* ... taxable item symbol)

## QUANTITY EXTENSION (MULTIPLICATION)

Twelve items of \$5.00 each into DP 1.  
Four items of \$2.00 each into DP 2.

Sub-total Read.  
(Taxable Total Read)  
Paid in Cash.

Control Lock: REG

12 X 500 DP 1

4 X 200 DP 2

ST

(TXBL TL)

AT/TL

06-15-84

12 X

5.00 @

1 \*60.00 \*

4 X

2.00 @

2 \*8.00

\*68.00 SI

\*6.00 IX

\*74.00 CR

NO 0013

11-53

# CHARGE SALES

Two items of \$1.23 each  
into DP 1.  
Sub-total Read.  
(Taxable Total Read).

The customer wants this sale  
to be finalized as his  
charge account.

Control Lock: REG

123 DP 1  
DP 1  
ST  
( TXBL TL )  
Chg

06-15-84

1 \*1.23 \*  
1 \*1.23 \*  
\*246 ST  
\*025 IX  
\*271 CH

No 0014

11-54

# NON-ADD NUMBER PRINT

The cashier wants to print  
#123456 for future reference  
(due perhaps to Customer No.,  
etc.)

Two items of \$1.23 into DP 1.

(Taxable Total Read).

Paid in Cash.

Control Lock: REG

123456 #  
123 DP 1  
DP 1  
( TXBL TL )  
AT/TL

06-15-84

#123456  
1 \*1.23 \*  
1 \*1.23 \*  
\*025 IX  
\*271 CH

No 0015

11-54

# RECEIVED ON ACCOUNT

Payment of \$10.00 into  
the cash drawer without  
relating to the today's  
sales.

Control Lock: REG

1000 R/A

06-15-84

\*1000 RA  
No 0016  
11-55

# PAID OUT

\$5.00 must be paid out to  
a wholesaler from the  
cash drawer.

Control Lock: REG

500 PO

06-15-84

\*500 PO  
No 0017  
11-55

# SHORT-TENDERING, MULTI-TENDERING

An item of \$3.00 into DP 1.

Taxable Total Read.

The customer first tenders  
\$0.30 in cash, which is  
short.

The cashier asks for more  
payment amount.

The customer then tenders  
another \$10.00 in cash.

Change due \$7.00 is calculated,  
displayed, and printed.

Control Lock: REG

300 DP 1  
TXBL TL  
30 AT/TL  
1000 AT/TL

06-15-84

1 \*300 \*  
\*030 IX  
\*330 TL  
\*030 AI  
\*1000 AI  
\*700 CG

No 0018

11-56

## SPLIT TENDERING

An item of \$5.00 into DP 2.

An item of \$3.00 into DP 2.  
Subtotal Read.

Taxable Total Read.

The customer first tenders  
\$5.00 in cash, and then  
asks for the rest balance  
to be his charge account.

Control Lock: REG

500 DP 2  
300 DP 2  
ST  
TXBL TL  
500 AT/TL  
Chg

06-15-84

2 \*500  
2 \*300  
\*800 ST  
\*500 AI  
\*300 CH

No 0019

11-57

## CASH TENDERING AND CASH TOTAL

An item of \$5.00 into DP 2.

An item of \$3.00 into DP 1.

Taxable Total Read.

The customer first tenders  
\$5.00 in cash, which is  
short. Knowing it, the  
customer then asks the  
cashier to finalize the  
rest balance as cash,  
which he will pay.

Control Lock: REG

500 DP 2  
300 DP 1  
TXBL TL  
500 AT/TL  
(Shortage Displayed)  
AT/TL

06-15-84

2 \*500  
1 \*300 \*  
\*030 IX  
\*830 TL  
\*500 AI  
\*330 CA

No 0020

11-57

# RETURNED MERCHANDISE OUTSIDE A SALE

A customer comes up and returns an item he purchased before. No other sale items.

A returned item of \$5.00 into DP 1.

The total is negative; therefore, the amount must be paid back to the customer in cash.

(The **RTN** key can be depressed before or after the amount entry, if before the Department Key depression)

## OPERATION 1

Control Lock: REG

**RTN** 500 **DP 1**  
( **TXBL TL** )  
**AT/TL**

## OPERATION 2

Control Lock: REG

500 **RTN** **DP 1**  
( **TXBL TL** )  
**AT/TL**

# RETURNED MERCHANDISE INSIDE A SALE, or VOIDING AN ITEM BEFORE THE LAST ONE

An item of \$12.00 into DP 1.  
An item of \$3.00 into DP 2.  
The customer then finds the first DP 1 item unnecessary, and therefore decides not to buy it.  
An item of 10.00 into DP 1.  
Paid in Cash.

Control Lock: REG

1200 **DP 1**  
300 **DP 2**  
**RTN** 1200 **DP 1**  
1000 **DP 1**  
( **TXBL TL** )  
**AT/TL**

06-15-84

1 \*500 RT \*  
-050 IX  
-550 CA  
No 0021  
11-58

06-15-84

1 \*500 RT \*  
-050 IX  
-550 CA  
No 0022  
11-58

06-15-84

1 \*1200 \*  
2 \*300  
1 \*1200 RT \*  
1 \*1000 \*  
\*1.00 IX  
\*14.00 CA  
No 0023  
11-59

# PERCENT DISCOUNT ON SUB-TOTAL

An item of \$4.56 into DP 1.  
 An item of \$2.56 into DP 2.  
 Sub-total Read.  
 10% is discounted from the  
 above sub-total amount.  
 Paid in Cash.

Control Lock: REG

456 DP 1  
 256 DP 2  
ST  
%- (10% is preset)  
 ( TXBL TL )  
AT/TL

06-15-84

1 \*456 \*  
 2 \*256  
 \*712 \$I  
 10 %-  
 -071  
 \*046 IX  
 \*687 CA

No 0024

11-59

## ITEM CORRECT ON A PERCENT DISCOUNT ENTRY, RE-ENTER OF A PERCENT DISCOUNT

An item of \$4.56 into DP 1.  
 An item of \$2.56 into DP 2.  
 Sub-total Read.  
 5% must be discounted from the  
 above sub-total amount, but  
 the cashier depressed %-  
 without the manual rate "5"  
 entry, which resulted "10%"  
 discount due to the preset  
 rate. So the cashier deletes  
 the 10% discount and corrects  
 it into 5% discount.  
 Paid in Cash.

Control Lock: REG

456 DP 1  
 256 DP 2  
ST  
%- (10% is preset)  
VOID  
 5 %-  
 ( TXBL TL )  
AT/TL

06-15-84

1 \*456 \*  
 2 \*256  
 \*712 \$I  
 10 %-  
 -071  
 -071 VO  
 5 %-  
 -036  
 \*046 IX  
 \*722 CA

No 0025

12-00

## PERCENT DISCOUNT ON A DEPARTMENT ITEM

An item of \$1.00 into DP 1.  
 7% is discounted from the  
 above DP 1 item.  
 An item of \$3.00 into DP 2.  
 Paid in cash.

Control Lock: REG

100 DP 1  
 7 %-  
 300 DP 2  
 ( TXBL TL )  
AT/TL

06-15-84

1 \*1.00 \*  
 7 %-  
 -007  
 2 \*3.00  
 \*010 IX  
 \*403 CA

No 0026

12-00

# ITEM CORRECT ON A DEPARTMENT ITEM

An item of \$1.00 into DP 2.  
An item of \$5.00 into DP 1,  
which is found to be a  
mistake, and must be correct-  
into \$6.00.  
Sub-total Read.  
Paid in cash.

Control Lock: REG

100 DP 2  
500 DP 1  
VOID  
600 DP 1  
ST  
( TXBL TL )  
AT/TL

06-15-84

2 \*1.00  
1 \*5.00 \*  
1 \*5.00 VD  
1 \*6.00 \*  
\*7.00 ST  
\*060 IX  
\*760 CA.

No 0027  
12-01.

## POWER FAILURE DURING PRINTING A DEPARTMENT ITEM

Power fails just after this  
key is depressed. Then the  
power recovers after a while.

(The second line item which was  
being printed when power failed  
was not printed correctly. In  
this example, the "\*" symbol is  
missing. But on the power re-  
covery, the "\*\*\*\*\*" symbol  
(indicating Power Failure)  
is first printed, and then the sub-  
total of the so-far entered  
items is printed. Now the  
normal operations can follow.

Control Lock: REG

200 DP 2  
DP 2  
  
300 DP 1  
ST  
( TXBL TL )  
AT/TL

06-15-84

2 \*2.00  
2 2.00  
\*\*\*\*\*  
\*4.00 ST  
1 \*3.00 \*  
\*7.00 ST  
\*030 IX  
\*730 CA

No 0028  
12-01.

## POWER FAILURE DURING PRINTING OTHER ITEMS THAN DEPARTMENT

Power fails just after this  
key is depressed. Then the  
power recovers after a while.

Control Lock: REG

300 DP 1  
ST  
( TXBL TL )  
AT/TL

(The finalizing line which was being printed when the power  
failed was not printed correctly. In this example, the  
print turned out to be "0". But on the power recovery,  
the Power Failure symbol "\*\*\*\*\*" is first printed, and  
then the correct content "\*3.30 CA" is printed. Therefore  
the sale is finalized without failing the sale balance.

06-15-84

1 \*3.00 \*  
\*3.00 ST  
\*030 IX  
0  
\*\*\*\*\*  
\*330 CA

No 0029  
12-01.

## READ (X) AND RESET (Z) REPORTS

The following are the key operations and print contents of the Read (X) and Reset (Z) Reports. Both reports print the same content, except that the resettable counters and totals will be reset (cleared) after taking a Z report while the data remains uncleared after an X report. Therefore, a Z report is usually issued once a day after closing the store, while X report may be issued any number of times during the day to read the sales record up to that time. A reset count is printed on a Z report only.

### READ (X) REPORT

Control Lock: X, AT/TL

### RESET (Z) REPORT

Control Lock: Z, AT/TL

06-15-84		Date	06-15-84	
	X	X Report — Z Report		Z
*18251	GT	Grand Total (non-resettable)	*18251	GT
45		Gross Sales Item Count	45	
*18251	GS	Gross Sales Total	*18251	GS
1 24		Department 1 Sales Item Count	1 24	
*9427		" " " Total	*9427	
2 17		Department 2 Sales Item Count	2 17	
*5080		" " " Total	*5080	
*944	TX	Tax Total	*944	TX
16		Total Customer Count	16	
*15451	NS	Net Sales Total	*15451	NS
3		Percent Discount Count	3	
*1.14	%-	" " Total	*1.14	%-
14		Cash Sales Customer Count	14	
*14766	CA	" " Total	*14766	CA
2		Charge Sales Customer Count	2	
*571	CH	" " Total	*571	CH
1		Received on Account Count	1	
*1000	RA	" " " Total	*1000	RA
1		Paid Out Count	1	
*500	PO	" " Total	*500	PO
*15266	CA ID	Cash-in-drawer Total	*15266	CA ID
1		Item Correct Count	1	
*500	VO	" " Total	*500	VO
3		Returned Merchandise Item Count	3	
*2300	RI	" " Total	*2300	RI
No 0030		Consecutive No.	0001	Z
12-02		Current Time	No 0031	
			12-02	

# PROGRAMMING OF THE REGISTER

## SETTING BASIC REGISTER REQUIREMENTS BY 6-DIGIT CODE ENTRY

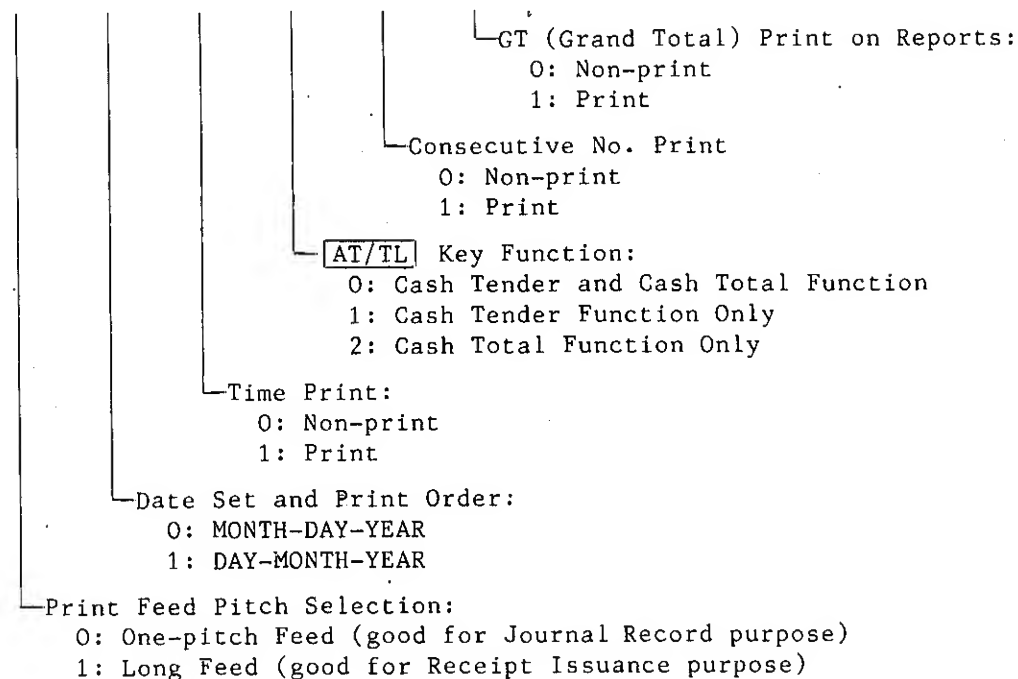
This determines the print feed pitch (one-pitch feed for journal print use or long feed for receipt issuance use), date print order, time print or non-print, AT/TL key function, consecutive No. print or non-print, and GT print or non-print.

CONDITION: After a reset

OPERATION: Control Lock: SET

Enter a 6-digit code, depress **ST**.

ex.) 0 → 0 → 1 → 0 → 1 → 1 → **ST**



- NOTES:**
1. The preceding 0's may be omitted, if any. As in the above example, only 1011 may be entered instead of 001011.
  2. Any other number than designated above will result in an error if attempted.
  3. For % and tax rate calculation, the fraction will automatically be rounded off, and no other rounding method is available on the MA-68 model.

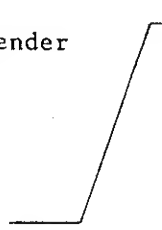


### SAMPLE OPERATION:

To set the following requirements:

Print Feed Pitch -- Long Feed: 1  
Date Order -- MONTH-DAY-YEAR: 0  
Time Print -- Print: 1  
AT/TL Key Function -- Cash Tender  
and Cash Total Function: 0  
Consecutive No. -- Print: 1  
GT on Reports -- Print: 1

Turn the Control Lock to SET.  
Enter 101011, depress **[ST]**.



#	101011
No	0002
	00-06

### **SETTING LISTING CAPACITY FOR ALL DEPARTMENT ENTRIES**

Any one-digit number from 1 to 6 can be set as the common listing capacity for all entries through either department key. If a listing capacity (LC) is once set, no entry of an amount exceeding the digit designated by the LC will be allowed in the "REG" position of the Control Lock. The LC is effective only for department entries, but not for Non-add # entries or amount tendered through **[AT/TL]** key.

CONDITION: Any time outside a sale.

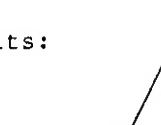
OPERATION: Control Lock: SET

Enter a number of digits for amount entry limit (1~6), depress **[#]**.  
(Attempt to enter 0, 7, 8, or 9 will result in an error on the **[#]** key depression.)

### SAMPLE OPERATION:

To set the limit to "6" digits:

Control Lock to SET.  
Enter 6, depress **[#]**.



	00-00-00
#	006
No	0003
	00-07

### **SETTING THE DATE**

A standard calendar and the TIME-OF-DAY (TOD) clock circuit is installed in the series MA-68 model. Therefore, once the date and the time is set, seldom is adjustment necessary. Neither is a leap year adjustment necessary.

CONDITION: Any time outside a sale

OPERATION: Control Lock: SET

Enter a 5 or 6-digit number to indicate the date (MONTH-DAY-YEAR order is standard; or DAY-MONTH-YEAR if so programmed in the 6-DIGIT CODE ENTRY), and depress **NS**.

NOTE: If less than 5 digits are entered, it will result in time setting.

SAMPLE OPERATION:

To set the date to "June 15, 1984":

Control Lock to SET,  
Enter 6 1 5 8 4, depress **NS**.

00-00-00

06-15-84

No 0004

00-09

**SETTING THE TIME**

CONDITION: Any time outside a sale

OPERATION: Control Lock: SET

Enter a 3 or 4-digit number to indicate the time (in 24-hour system), and depress **NS**.

NOTE: If more than 4 digits are entered, it will result in date setting.

SAMPLE OPERATION:

To set the time to "11:48 a.m.":

Control Lock to SET,  
Enter 1148, depress **NS**.

06-15-84

No 0005

11-48

**SETTING THE %- PRESET RATE**

The **%-** key can be programmed with a preset rate from 0% to 99%. Once a rate is preset, a simple depression of the % key will function with the rate in the "REG" mode. If a manual rate is entered before the **%-**, it will function with the manual rate instead. If 0% is preset, the **%-** key will always require a manual rate entry.

CONDITION: Any time outside a sale

OPERATION: Control Lock: SET

Enter the preset rate in max. 2 digits (0~99%; as "10" for 10% in the sample print on the left), and depress **%-**.

06-15-84

# 10 %-

No 0006

11-48

## SETTING TAX TABLE

The MA-68 model can calculate tax using one of three methods of tax calculation, which can be set in the programmable memory. The three methods are:

1. FULL-BREAK METHOD (COMAINATION OF NON-CYCLIC BREAKS AND CYCLIC BREAKS)  
(Maximum 32 breaks programmable)
2. COMBINATION OF NON-CYCLIC BREAKS AND % RATE
3. % RATE ONLY

CONDITION: After a reset

OPERATION: Control Lock: SET

Select one of the following three methods to meet your tax status:

### 1. FULL-BREAK METHOD

#### Non-cyclic Breaks

- 1) Enter the first break point of price that is the non-taxable limit, and depress DP 1 (Taxable Department Key).
- 2) Enter the next break point of price that is the limit to collect the tax amount 1¢, and depress DP 1.
- 3) Repeat Step 2) above, with alternating each limit price for collecting tax amount of 2¢, 3¢, 4¢ ... until the non-cyclic breaks are all entered.
- 4) Depress ST to end the non-cyclic break entries.

#### Cyclic Breaks

- 1) Do the same operation as in Step 3) above, entering each limit price for each tax amount that increases by 1¢, followed by the DP1 key. Enter the last price so that the difference between the last non-cyclic break price already entered and the last cyclic once will be a multiple of one dollar (\$9.00 maximum). Otherwise, the tax calculation will not function correctly.
- 2) Depress AT/TL to end the cyclic break entries as well as the entire tax program.

### 2. COMBINATION OF NON-CYCLIC BREAKS AND % RATE

#### Non-cyclic Breaks

- 1) Do the same operation stated above in Method 1, Steps 1) through 4) of Non-cyclic Breaks.

#### % Rate

- 1) Enter the tax percentage rate above the non-cyclic breaks. (The rate is entered in maximum 4 digits; 2 digits above the decimal and 2 digits below the decimal point. For example, to set 4%, enter 400.)
- 2) Depress AT/TL to end the percentage rate entry as well as the entire tax table program.

### 3. % RATE ONLY

- 1) Enter "0", depress **DP1**, and depress **ST**.
- 2) Enter the percentage rate in the same manner as in Method 2, Step 1) of the percentage rate entry above. Then depress **AT/TL** to end the entire tax program.

**NOTES:** 1. A maximum of 3-digit value is entered for each break. It will result in an error with a value with 4 or more digits.  
 2. If any incorrect value is found to have been entered, first complete the entire tax table program (up to the **AT/TL** key operation), and then do the correct tax table program operation over again from the first.

**SAMPLE OPERATION:** To program the following tax tables respectively:

#### 1. FULL-BREAK METHOD

Tax Table			Key Operation	
Non-cyclic Breaks			Control Lock: SET	
(from)	(to)	(tax)	(Enter) →	(Depress)
0¢	12¢	0¢	12	<b>DP1</b>
13	34	1	34	<b>DP1</b>
35	59	2	59	<b>DP1</b>
60	87	3	87	<b>DP1</b>
			<b>ST</b>	
Cyclic Breaks			112	<b>DP1</b>
88	112	4	137	<b>DP1</b>
113	137	5	162	<b>DP1</b>
138	162	6	187	<b>DP1</b>
163	187	7	<b>AT/TL</b>	

#### 2. COMBINATION OF NON-CYCLIC BREAKS AND % RATE

Non-cyclic Breaks			Control Lock: SET	
0¢	12¢	0¢	12	<b>DP1</b>
13	34	1	34	<b>DP1</b>
35	59	2	59	<b>DP1</b>
60	87	3	87	<b>DP1</b>
			<b>ST</b>	
5% above Non-cyclic Breaks			500	<b>AT/TL</b>

#### 3. % RATE ONLY

10% to any amount		Control Lock: SET	
0	<b>DP1</b>	<b>ST</b>	
1000	<b>AT/TL</b>		

06-15-84

\*Q12 II

\*Q34 II

\*Q59 II

\*Q87 II

\*Q87 SI

\*1.12 II

\*1.37 II

\*1.62 II

\*1.87 II

\*1.87 II

No 0007

11-50

06-15-84

\*Q12 II

\*Q34 II

\*Q59 II

\*Q87 II

\*Q87 SI

500 %

No 0008

11-50

06-15-84

\*Q00 II

\*Q00 SI

1000 %

No 0009

11-51

## PROGRAM VERIFICATION

### TAX CALCULATION TEST

Tax calculation test may be performed to check if the programmed tax table functions properly.

OPERATION: Control Lock: X

Enter any amount through the numeric keys, and depress TXBL TL. The tax due to the entered amount will be displayed. (No printing will take place. The amount entered or the obtained tax amount will not affect any sales total memories.) Repeat the amount entry and the TXBL TL operation as many times as desired, alternating the amount, until the programmed tax table is found to be set properly.

ex.) KEY OPERATION

AMOUNT DISPLAY

Control Lock to X.

Enter 200, 2.00 -- entered amount

Depress TXBL TL. 0.20 -- tax due

Enter 1245, 12.45 -- entered amount

Depress TXBL TL. 1.25 -- tax due

(in case tax rate of 10%  
has been programmed.)

### VERIFYING THE PROGRAMMED DATA

The programmed data may be read by outputting a program verification print by the following operation:

OPERATION: Control Lock: X

Depress ST.

06-15-84	Date
# 101011	6-digit Code for Basic Requirements
# 006	Listing Capacity
# 10 %-	%- Preset Rate 10%
0010	Consecutive No.
11-52	Current Time

### VERIFYING THE TIME

The current time can also be read easily by turning the Control Lock to the "LOCK" position. The time is displayed in the 24-hour system.

# MAINTENANCE

## PAPER SETTING

On Model MA-68, the printer may be used for journal-format print or receipt-format print. When the paper roll comes to the end, remove the old paper from the printer by turning the Manual Paper Feed Knob and set a new paper roll following the procedure below:

1. Remove the Receipt Cover. (Fig.1)

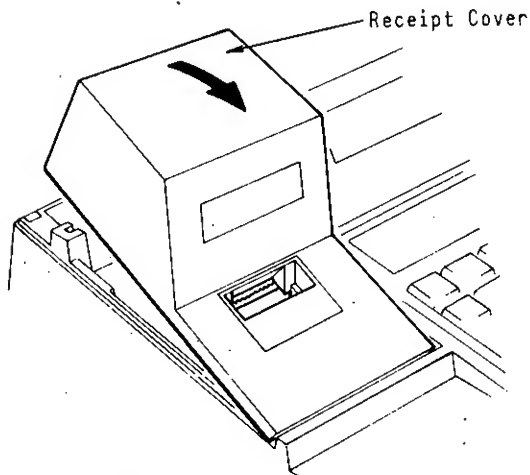


Fig. 1

2. Set the paper roll to the paper holder. (Fig.2)

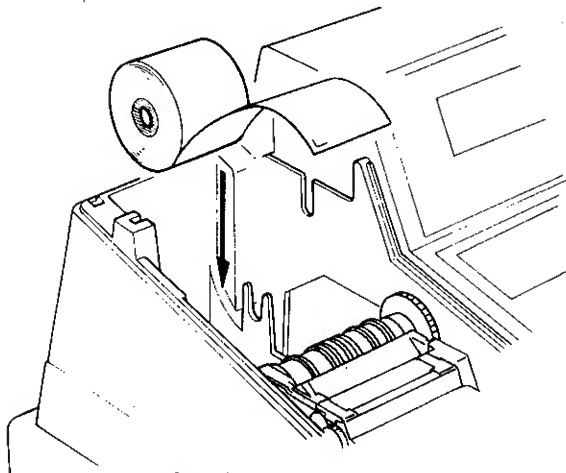


Fig. 2

3. Cut square the paper end, insert the paper end into the paper inlet located on the rear side of the printer, and press the **FEED** key on the keyboard or use the Manual Paper Feed Knob until the paper end comes out of the Paper-cutter Edge. (Fig.3)

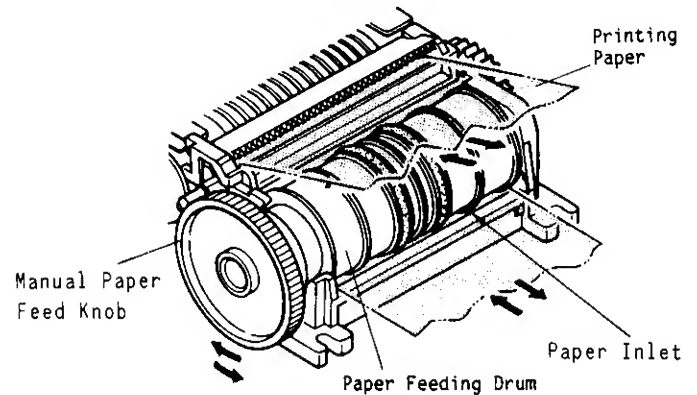


Fig. 3

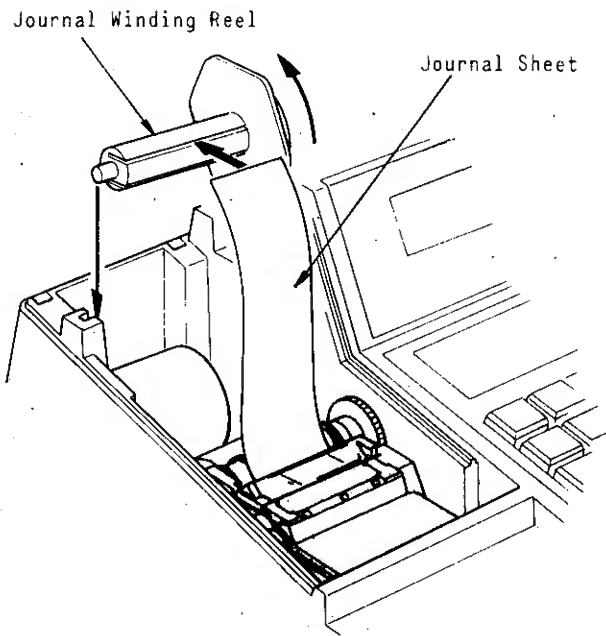


Fig. 4

4. Wind up the paper end of the journal sheet on the Journal Winding Reel two or three times, set the reel to the holder, and press the **FEED** key for a while to tense the paper. (Fig. 4)

For the Receipt-format print, this operation is not necessary.

5. Attach the Receipt Cover with the paper end coming out of the Receipt Outlet located on the Receipt Cover if the Receipt-format print has been selected. (Fig. 5)

for the Journal-format print, simply attach the Receipt Cover. The Receipt Outlet is used as Journal Window in this case.

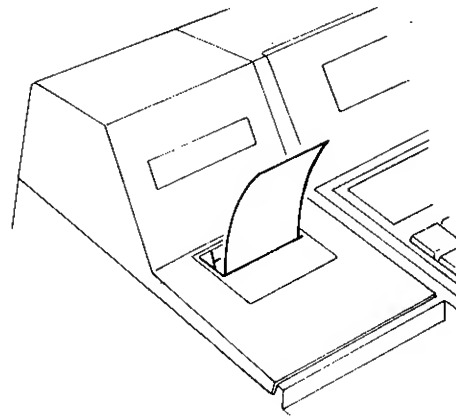


Fig. 5

## REPLACING INK ROLLER:

When the print content becomes too light to read, replace the ink roller with a new one.

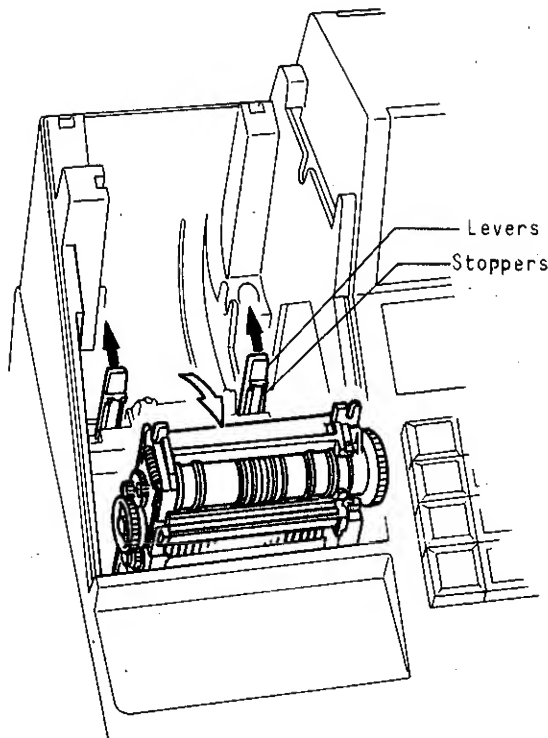


Fig. 6

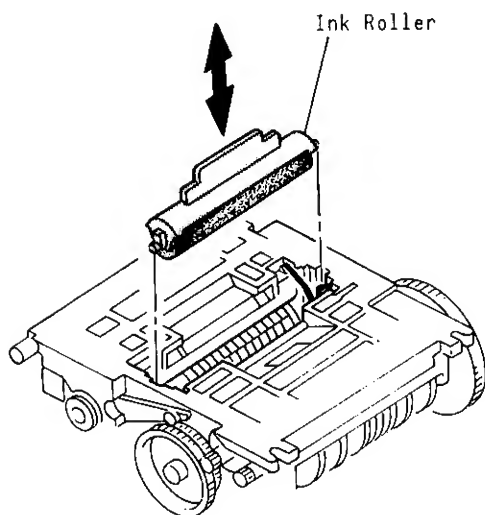


Fig. 7

1. Remove the Receipt Cover.
2. Pull up the rear plastic edge of the printer (black-colored) to unlock the stoppers (white-colored) while pressing the plastic levers rear-ward (white-colored) on both sides of the Printer Holder that is fixed on the drawer unit. (One lever at a time will ease unlocking.) (Fig. 6)
3. Let the Printer Unit stand upright as shown in Fig.6. (Do not attempt to remove the unit entirely from the holder otherwise, the attached cables might be damaged.) The Ink Roller is set in the middle of the bottom of the unit.
4. Turn the plastic protrusion of the roller upward and pull it off. Now it is removed from the Ink Roll Holder. (Fig.7)
5. For installing a new Ink Roller, follow the removing operations in reverse order.

NOTES: 1) To install a new ink roller, push it all the way into the Ink Roll Holder and release the protrusion as it will swing into the correct position by the spring. (Fig.8)

- 2) Set the Printer Unit all the way into the Print Unit Holder. When it is settle correctly, a "click" is heard.

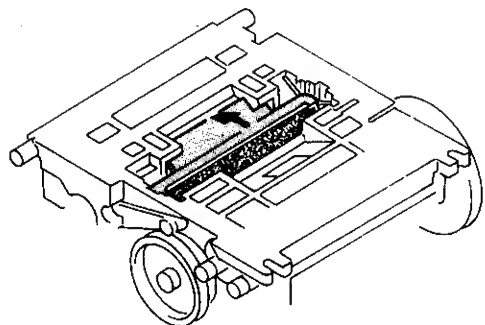
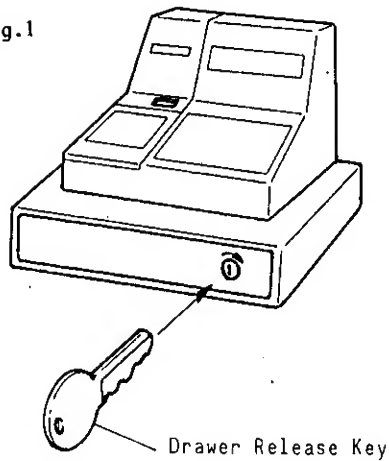


Fig. 8



## MANUAL DRAWER RELEASE AND LOCK

Fig.1

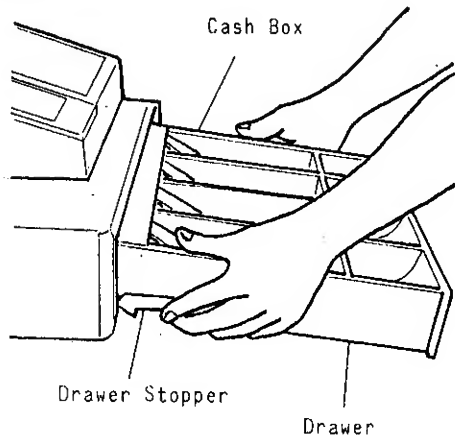


### ■ Releasing

The drawer opens automatically when a registration is made. In the event of a power failure or other troubles the drawer can be opened in the following manner.

- 1) Insert the Drawer Release Key into the drawer release lock and turn the key 45 degrees clockwise. The drawer will now open. (Fig.1)
- 2) The Drawer Release Key can be taken out by returning it to the original position.
- 3) When the drawer is closed, it is automatically locked and will not open without the Drawer Release Key.

Fig.2



### ■ Removing the Drawer

- 1) To remove the drawer, lift it up by the stoppers attached on both sides and pull it out. (Fig.2)
- 2) When installing the drawer, the fit its rollers onto the rails of the register and push it all the way in. (Fig.2) The coin case can be removed from the drawer, by lifting it up at the front.

## CDC (Cash Drawer Cover) LOCK

### ■ Locking

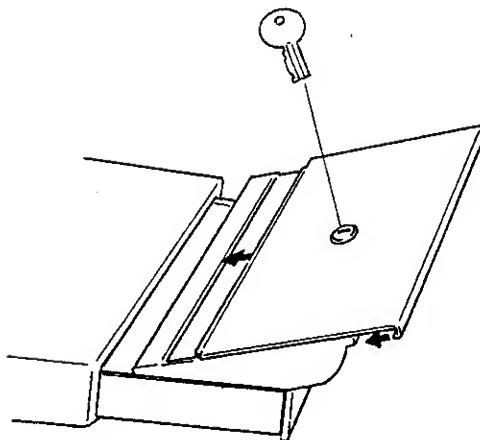
Keep the money case in the condition of being lifted up from the drawer.

Close the cover so that the arrow parts of the case go under the corresponding parts of the money case.

Insert the key (the same key for locking the Drawer) into the key-hole on the cover, and turn clockwise. The cover is now locked.

### ■ Opening

Release the lock by the key, lift it up with the money case, and pull out frontward while lifting it up.



## SPECIFICATIONS

SIZE ..... 397mm(width) x 423mm(depth) x 292mm(height)  
with MIDI drawer included

WEIGHT ..... 12kg

POWER REQUIRED ..... AC 117V 60Hz

POWER CONSUMED ..... 0.15A (Operating), 0.09A (Standby)

AMBIENT TEMPERATURE ..... 0°C ~ 40°C, 15% ~ 90% (Relative Humidity)

SIZE OF RECEIPT/JOURNAL TAPE  
..... 58mm(width) x 80mm(diameter)

**NOTE:** A liquid crystal is used as the display indicator in this model. Due to the properties of liquid crystal, the entire surface of the display will become too dark to read if the ambient temperature is too high. In such cases, however, the display will return to the normal state when the temperature decreases. For this reason, please avoid exposing the unit to extremely high temperatures. The appropriate range of temperature for use is between 0°C and 40°C.



